**Additional table 1**. Overall survival univariate analysis in patients with penile squamous cell carcinoma

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| --- | --- | --- | --- | --- |
| Variable | Disease-free survival | | | |
| Univariate | | Multivariate | |
| HR (95%CI) | P-value | HR (95%CI) | P-value |
| Histologic grade (WD vs M to PD) | 9.517 (1.141-79.384) | 0.037 | 2.987 (0.282-31.633) | 0.363 |
| Stage (I, II vs III, IV) | 17.278 (2.063-144.685) | 0.009 | 13.679 (0.236-791.731) | 0.206 |
| Subtype (HPV vs non-HPV related) | 0.475 (0.106-2.126) | 0.330 |  |  |
| LV invasion | 9.663 (1.159-80.542) | 0.036 | 0.678 (0.013-35.852) | 0.848 |
| Perineural invasion | 2.073 (0.462-9.305) | 0.341 |  |  |
| Necrosis | 2.920 (0.565-15.103) | 0.201 |  |  |
| Mitotic figure (≤8 vs >8 (/HPF)) | 2.504 (0.559-11.221) | 0.230 |  |  |
| MIB-1 LI (≤40 vs >40) | 2.376 (0.526-10.736) | 0.261 |  |  |
| p16INK4a positivity | 2.807(0.624-12.628) | 0.116 |  |  |
| TERT-p (wild vs mutant) | 0.411(0.079-2.124) | 0.288 |  |  |

HR, hazard ratio; CI, confidence interval; WD, well differentiated; M to PD, moderately to poorly differentiated; HPF, high-power field; LV, lymphovascular; LI, labeling index.; HPV, human papilloma virus.